



External Evaluation Report (REE) for the procedure for obtaining a provisional authorisation to operate (AFP) of a Doctoral Study Domain

Higher Education Institution/Education Provider Organization:	National University of Science and Technology POLITEHNICA Bucharest
Doctoral School:	Medical engineering
Doctoral Domain:	Bioengineering
The objective of the external evaluation:	Provisional authorisation to operate (AFP)

Members of the ARACIS Evaluation Panel

No.	Last Name and First Name	Team role	Signature
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I. Introduction

The report refers to the external evaluation of the field of doctoral studies Bioengineering within IOSUD – UNST Politehnica Bucharest.

Type of evaluation:

Evaluation for accreditation of the field of doctoral studies Bioengineering, within IOSUD of the IOSUD – National University of Science and Technology Politehnica Bucharest, carried out by ARACIS.

Evaluation period: September 3-5, 2025

Evaluation team:

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IOSUD POLITEHNICA Bucharest was established in accordance with the provisions of the Code of Doctoral Studies (Government Decision No. 681/2011). Since 2012, 13 doctoral schools have been organized within POLITEHNICA Bucharest, covering traditional fields of engineering and exact sciences. In 2013, a 14th doctoral school was established, dedicated to an interdisciplinary field: Laser and Accelerator Engineering and Applications, in the context of the ELI-NP project. These schools are integrated within their corresponding faculties, allowing for a direct connection between doctoral education and the teaching and research activities conducted at the faculty level. Since 2023, five additional doctoral schools have been coordinated, following the merger between the University POLITEHNICA of Bucharest and the University of Pitești.

IOSUD – POLITEHNICA Bucharest has experienced continuous development, reflected in:

- ARACIS accreditation with a "high degree of confidence" for POLITEHNICA Bucharest,
- Implementation of an Internal Quality Assurance System (SIAC),
- Attraction and training of elite academic staff and researchers,
- Access to European funding programs for doctoral and postdoctoral students,
- Development of excellent research infrastructure (modern platforms and laboratories).

POLITEHNICA Bucharest offers doctoral studies in 20 fields of study, grouped as follows:

Fundamental Field: Engineering Sciences

1. Electrical Engineering
2. Power Engineering
3. Systems Engineering
4. Computer and Information Technology
5. Electronics, Telecommunications, and Information Technologies Engineering
6. Mechanical Engineering
7. Industrial Engineering
8. Transport Engineering

9. Aerospace Engineering
 10. Materials Engineering
 11. Automotive Engineering
 12. Environmental Engineering
 13. Engineering and Management
 14. Chemistry
 15. Chemical Engineering
 16. Physics
 17. Mathematics
 18. Computer Science
- Fundamental Field: Sports Science and Physical Education
19. Sports Science and Physical Education
- Fundamental Field: Humanities and Arts
20. Philology

In 2013, by decision of the Senate of POLITEHNICA Bucharest, the Doctoral School of Laser and Accelerator Engineering and Applications was established in an interdisciplinary field focused on frontier research.

IOSUD POLITEHNICA Bucharest proposes the establishment of the doctoral field of study 'Bioengineering' within the Doctoral School of Medical Engineering, as the first IOSUD in Romania to organize doctoral studies in this emerging and strategic field. The need to establish this field arises from the rapid development of applied sciences in biology and medicine, which requires the creation of a specialized domain, distinct from traditional engineering or medical disciplines.

The establishment of the new doctoral field of study in Bioengineering complements the educational and research pathway of students at POLITEHNICA Bucharest, as the university has a recognized tradition in conducting educational and research programs in fields related to bioengineering, offering bachelor's studies in Bioengineering through the Faculty of Chemical Engineering and Biotechnologies, and bachelor's studies in Medical Engineering through the Faculty of Medical Engineering and the Faculty of Materials Science and Engineering. The university also runs study programs in other related fields, such as bachelor's programs in Environmental Engineering within the Faculty of Biotechnical Systems Engineering, and bachelor's programs in Mechanical Engineering within the Faculty of Industrial Engineering and Robotics. Moreover, students benefit from master's programs in Biotechnologies, Biomaterials, Intelligent Medical Systems, and other complementary fields.

The absence of a doctoral field in Bioengineering within the Doctoral School of Medical Engineering creates an educational discontinuity for graduates of these programs, who are unable to continue their advanced training within the same academic field.

Therefore, within IOSUD POLITEHNICA Bucharest, there is a need to expand the range of doctoral fields to provide doctoral students with advanced specialization and innovation in biomedical technologies. Current healthcare challenges—such as the development of personalized medicine, the implementation of intelligent medical devices, the production of advanced biomaterials, and the computational modeling of biological systems—require specialists with advanced doctoral training in Bioengineering. By including this field, the Doctoral School of Medical Engineering can become the core hub for training such specialists, supporting applied research and innovation in healthcare.

II. Methods used

The methods and tools used in the external evaluation process, before, and during the evaluation visit were the following:

- Analysis of the Internal Evaluation Report of the Bioengineering field and its annexes;
 - Analysis of the documents in electronic format made available by IOSUD at the request of the evaluation commission;
 - Analysis of documents, data and information available on the IOSUD website and the Doctoral School, in electronic format;
- On-site visit:
- classrooms;
 - research laboratories in the field of bioengineering, medical engineering, material sciences;
 - research centers;
 - analysis of the documents made available by IOSUD in physical format during the assessment visit;
 - Meeting/discussions with the management of the Doctoral School/Schools in which the evaluated field of doctoral studies operates;
 - Meeting/discussions with the doctoral supervisors in the field of doctoral program evaluated;
 - Meeting/discussions with representatives of various structures of IOSUD/School/Schools
 - Doctoral programs in which the field of doctoral studies evaluated operates:
 - The Doctoral School Council, the Quality Assessment and Assurance Committee, the Quality Assurance Department, the Ethics Committee;
 - secretariats;

The entire team of experts participated in the writing of this Report.

The PhD student evaluator, Maria – Sanziana Varodi completed with hers opinions on several indicators and drafted the Synthesis of the discussions with doctoral students from the doctoral school, which she inserted in the Commission's Report.

III. Judgement on the extent to which the standards and performance indicators are fulfilled

DOMAIN A. Institutional capacity

Criterion A.1. Managerial and administrative structures and processes involving students and other stakeholders

Standard S.A.1.1. Organisational components and institutional processes

The HEI has organisational components in its structure, which function based on adequate competences, responsibilities, processes, and implementation procedures, and ensure an effective management system.

Indicator I.P.A.1.1.1	For delivering the study programme/domain, the HEI has adequate organisational components and an adequate management system, which operate based on methodologies, regulations and procedures that are periodically reviewed as required by law.
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The Doctoral School of Medical Engineering was established by Senate Decision No. 358/28.11.2024, in accordance with the provisions of the POLITEHNICA Bucharest Charter. IOSUD Politehnica Bucharest

has a well-defined organizational structure that ensures the operation of the doctoral study program in the field of Bioengineering, in compliance with current legal and methodological provisions. Procedures and regulations are periodically reviewed in accordance with legislation and ARACIS regulations. Administrative, teaching, and research organization is carried out in collaboration with the leadership structures of POLITEHNICA Bucharest.

The decision-making process involves administrative structures such as the Faculty Council, the Doctoral School Council, the Council for Doctoral University Studies (CSUD), the Ethics Committee, and the Quality Assurance Committee (CEAC), according to the structure approved by the Senate of Politehnica Bucharest. The participation of doctoral students in the decision-making process is regulated in the University Charter and is carried out through their direct involvement in the governing structures of the university and the faculties. Students have elected representatives in the Council of Doctoral Schools, where they have voting rights and actively contribute to decision-making regarding the functioning of doctoral university study programs. Also, the faculty ensures the involvement of other interested parties, such as alumni and representatives of the socio-economic environment, in processes relevant to the development and monitoring of the program. They are consulted in the process of reviewing the curriculum and actively contribute to defining the learning outcomes that are correlated with the competencies necessary for labor market insertion.

The institutional structures of the National University of Science and Technology Politehnica Bucharest include, in addition to the University Senate and the Board of Administration, a number of academic and administrative councils that are essential for the effective conduct of educational and research activities. These include faculty councils, department councils, doctoral school councils, the Council for Doctoral Studies (CSUD), as well as technical and administrative structures.

With regard to doctoral studies, the Council for Doctoral Studies (CSUD) serves as the university's decision-making and deliberative body in this field. It is led by a director and operates in accordance with the Framework Regulation of January 8, 2024, on doctoral university studies, approved by Order No. 3020. The CSUD is composed of:

- The CSUD Director (appointed through a competitive selection process),
- The Directors of the 19 doctoral schools,

Internationally renowned experts in the doctoral fields of study at Politehnica Bucharest.

The CSUD meets monthly (or in extraordinary sessions) and has the following main responsibilities:

- Enhancing the scientific performance of doctoral programs,
- Developing interdisciplinary collaborations,
- Promoting doctoral studies at the international level,
- Evaluating infrastructure and leadership personnel,
- Engaging in European organizations (e.g., EUA-CDE, CESAER),
- Implementing national and European strategies related to doctoral studies.

The Bioengineering doctoral field will be developed in a university that has all the conditions regarding management, operational procedures, and regulations constantly revised based on legislation.

The strategic plan of the Doctoral School includes the development and monitoring of the quality of the doctoral study program in Bioengineering, in accordance with the strategic objectives of IOSUD POLITEHNICA Bucharest (promoting academic freedom, honesty and integrity, equality of opportunity in access to university-level study programs, establishing a system of evaluation and quality assurance in all areas of academic life to achieve academic excellence, promoting flexible academic programs that allow the affirmation of students' personalities, development of their intellectual abilities and professional knowledge, strengthening the university's role in the economic and social environment) and of the university (training specialists in scientific research through master's, doctoral, and postgraduate studies, as well as specialization and advanced training mobility programs in Romania and abroad, internationalization as a tool for improving the quality of education and research within its organizational components, and organizing and conducting scientific research at an advanced and competitive level within the European Research Area). The relevant elements of the strategic plan are correlated with the program's mission, training objectives, and institutional quality assurance policies.

There are no recommendations

The indicator is: fulfilled

Standard S.A.1.2. Stakeholder engagement

The HEI proves that it engages the relevant stakeholders in developing methodologies and regulations, as well as implementation procedures.

Indicator I.P.A.1.2.1	The opinions of the faculty and department members, of the subsidiary or extension* and of other stakeholders are considered in the process of adopting and revising methodologies, regulations and implementation procedures.
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Within the Doctoral School of Medical Engineering, the process of adopting and revising methodologies, regulations, and procedures is conducted in a participatory and transparent manner, with the active involvement of members of the academic community. Consultation with partners from the academic environment, industry, and research has contributed to defining the Bioengineering program and its research topics. Economic partners include S.C. Ortovit SRL, the National Agency for Medicines and Medical Devices, Medist SRL, and Biosintex. The existing organizational structure, resources, infrastructure, and procedures support the optimal implementation of the Bioengineering field in accordance with ARACIS standards and those of IOSUD Politehnica Bucharest.

During the meeting with employers of PhD students, there was broad agreement that bioengineering doctoral studies represent an excellent opportunity for the development of the Doctoral School at UNST Politehnica Bucharest. Most representatives emphasized that a multidisciplinary doctoral program would be particularly beneficial to their fields of interest. Participants highlighted that establishing such a program would not only enhance knowledge within their organizations but also provide students with opportunities to engage in applied research tailored to clinical needs. Moreover, it would facilitate knowledge transfer from academia to industry - an aspect they highly valued. While informal consultations regarding the curriculum and research areas have already taken place, the institution is encouraged to further strengthen its collaboration with socio-economic partners to support the continued development and successful implementation of the program.

Discussions with the teaching staff highlighted a growing interest in the implementation of the bioengineering doctoral program at UNST Politehnica Bucharest. Many staff members reported that prospective students have already expressed inquiries about this specific doctoral field. One concern raised during the meetings related to the potential transition of current enrolled PhD students under the supervision of the current PhD Supervisor, in the event that their supervisors shift to a different doctoral program (bioengineering). However, it was noted that the institution is expected to establish clear regulations to address this issue once the doctoral program is fully implemented and operational.

Recommendations

- ✓ *Establish structured partnerships with employers and other stakeholders via consistent engagement and consultation.*
- ✓ *Further develop mechanisms to ensure alignment between institutional research agendas and the identified needs of the socioeconomic environment, promoting demand-driven, application-oriented research.*

The indicator is: fulfilled

* The faculty, department, subsidiary, extension - hereinafter "organisational components"

Criterion A.2. The material resources and optimisation of the use of the material resources

Standard S.A.2.1. Material resources

The HEI owns adequate movable and immovable assets to enable it to carry out the study programme/domain.

Indicator I.P.A.2.1.1	The HEI legally owns venues for the related education, research and administrative processes, as well as for services for students, doctoral students and trainees, thus providing an enabling environment for living and studying, including for disabled persons. Optimal venues are also provided for activities of the staff. Such venues are adequately equipped.
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The physical infrastructure of the Doctoral School of Medical Engineering includes spaces dedicated to teaching, scientific research activities, administrative tasks, as well as areas specifically intended for student services. The teaching activities related to the program take place in lecture halls and laboratories within these spaces, adequately equipped to support research in the doctoral field of Bioengineering. These spaces are outfitted with high-performance equipment relevant to the doctoral field (Annex A1: Infrastructure and Equipment status). Additionally, doctoral students have access to specialized laboratories such as the Nanostructured Surface Engineering and Biomimetics Laboratory, the Processing and Intelligent Controlled Release Systems Laboratory, and the 3D Printing Laboratory.

For research activities, faculty members and doctoral students have access to research centers or laboratories affiliated with the program or the doctoral school (as applicable), such as the CAMPUS Research Institute, where relevant projects in the field of bioengineering are conducted

The university provides social services for students and offers accommodation in student dormitories, covering over 50% of the submitted accommodation requests. Additionally, there are support services for students (psychological counseling, career guidance, social assistance, etc.) available through the Career Counseling and Guidance Center, which operates in the university library, Building A, 3rd floor, Room 3.30. The center is easily accessible and adequately equipped.

To support the integration of students with disabilities, the university established the Center for Equity, Diversity, and Inclusion and implemented accessibility measures that include access ramps, adapted elevators, accessible restrooms, as well as learning support facilities. These measures are regulated by the Organization and Functioning Regulations of the Center for Equity, Diversity, and Inclusion.

During the on-site visit, nearly all the previously mentioned spaces were visited, with focus on the research facilities and spaces allocated to the doctoral students. The evaluated institution has made consistent efforts to enhance the material conditions necessary for PhD student academic success. These efforts are evidenced by the rehabilitation and modernization of key educational spaces, including laboratories, lecture halls, and seminar rooms. These upgrades contribute directly to the quality of the academic environment and support effective teaching and learning processes. However, one of the aspects that were observed during the on-site visit was the limited access to most of the buildings and facilities for individuals with disabilities and/or functional diversity, an aspect that the evaluated institution has to address in the future.

Recommendations

- *Progressively improve accessibility for individuals with disabilities and/or functional diversity, addressing architectural barriers in older buildings, while ensuring all new constructions are fully compliant with current accessibility standards.*

The indicator is: fulfilled

Standard S.A.2.2. Management of material resources

The organisational components manage the movable and immovable assets used for the evaluated study programme/domain in an optimal, sustainable manner.

Indicator I.P.A.2.2.1	The movable and immovable assets are properly maintained to ensure optimal conditions for studying, living and research, as well as for work.
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Teaching and research spaces (lecture halls, seminar rooms, laboratories, research centers) are maintained through periodic repair, cleaning, and refurbishment interventions, managed by the Heritage Directorate and chief administrators. Activities are carried out according to a plan approved at the POLITEHNICA Bucharest level (Periodic certification of research centers), and emergencies are addressed promptly

Movable assets — including IT equipment, furniture, and teaching apparatus specific to the evaluated program — are periodically inventoried and undergo maintenance processes in accordance with internal regulations (Operational Procedure on the Registration of Incoming and Outgoing Assets of POLITEHNICA BUCHAREST). Thus, the laboratories and infrastructure of POLITEHNICA Bucharest are properly maintained, benefiting from periodic investments in equipment and facilities.

Recommendations

- *Continue the systematic modernization of research laboratories by ensuring alignment of infrastructure (equipment, software, instrumentation) with current technological standards and scientific priorities relevant to the doctoral studies.*

The indicator is: fulfilled

Criterion A.3. Adequate human resources and transparent staff recruiting procedures developed according to the law

Standard S.A.3.1. Human resources

The HEI has the required human resources to organise and deliver the evaluated study programme/domain.

Indicator I.P.A.3.1.1	The human resources of the organisational component are suitable to perform the activities pertaining to the evaluated study programme/domain. The teaching staff has the required qualifications and professional competences to teach the subject matters assigned to them in the job list.
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All staff involved in teaching and research activities within the doctoral study program (Bioengineering) are employed in accordance with recruitment criteria established at the institutional level, in compliance with legal provisions. The status of doctoral supervisor within IOSUD POLITEHNICA Bucharest can be obtained after completing the habilitation procedures and obtaining the habilitation certificate (Regulation on habilitation and granting the status of doctoral supervisor within IOSUD – Politehnica).

Most courses are covered by tenured faculty members, ensuring the continuity and sustainability of the program. The teaching team is supplemented by associate faculty members, selected based on demonstrated professional competencies and relevant experience in the field of bioengineering. This complementarity between tenured and associate staff contributes to providing high-quality coverage of the courses in the curriculum. The participation of associate faculty members, who are active in the professional field specific to the program, adds value to the educational process by facilitating the connection of the curriculum content with labor market realities and current professional trends.

The personnel involved in the field of Bioengineering have proven experience, with doctoral supervisors selected according to IOSUD and ARACIS standards. The staff are actively engaged in

research activities, participating in research projects and grants (relevant research projects) as well as significant scientific events.

The doctoral supervisors involved in the development and support of this new field are already active in accredited fields belonging to the fundamental branch 'Mechanical Engineering, Mechatronics, Industrial Engineering, and Management,' as follows:

1. **Prof. Univ. Dr. Eng. Anton Hadăr** – doctoral supervisor in the field of Mechanical Engineering
2. **Prof. Univ. Dr. Eng. Cristina Ileana Covaliu-Mierlă** – doctoral supervisor in the field of Environmental Engineering
3. **Prof. Univ. Dr. Eng. Iulian Antoniac** – doctoral supervisor in the field of Materials Engineering
4. **Prof. dr. Eng. Horia Iovu**: PhD supervisor in the field of Chemical Engineering, Director of CSUD at POLITEHNICA Bucharest and leader of the Advanced Polymer Materials Group (APMG), Expert in biomaterials, nanocomposites, and tissue engineering.
5. **Prof. dr. Eng. Ciprian Iliescu**: PhD supervisor in the field of Chemical Engineering, Director of the Center of Excellence in Bioengineering – eBio-hub at POLITEHNICA Bucharest, Researcher with international experience in bioengineering, nanomedicine, and microfluidics, with a career in top institutions in Singapore and Romania.
6. **Prof. dr. Eng. Mariana Ioniță**: PhD supervisor in the field of Chemical Engineering, specialized in bioengineering, Professor at the Faculty of Medical Engineering, POLITEHNICA Bucharest, Coordinator of numerous national and international research projects in biomaterials, bioengineering, and regenerative medicine

The proven scientific value of these doctoral supervisors, together with other specialists in Mechanical Engineering, Environmental Engineering and Materials Engineering, ensures the expertise and human resources necessary for the creation and operation at high standards of the field of doctoral studies in Bioengineering within IOSUD–POLITEHNICA Bucharest. The proposed multidisciplinary team will consolidate and increase the competitive level of the Doctoral School of Medical Engineering and Bioengineering both nationally and internationally.

Recommendations:

- ✓ *Increasing the number of PhD supervisors. At least one PhD supervisor with medical skills would be an advantage for the doctoral field.*

The indicator is: fulfilled

Standard S.A.3.2. Recruitment procedures

Teaching staff recruitment procedures compliant with the provisions of the law.

Indicator I.P.A.3.2.1	Recruitment procedures comply with the provisions of the law, and are established and carried out transparently.
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The recruitment procedures for filling academic and research positions within the doctoral study program in Bioengineering comply with the applicable legal framework, being conducted transparently and fairly, in accordance with national legislation and the internal regulations of the National University of Science and Technology POLITEHNICA Bucharest. Competition announcements, job descriptions, specific conditions, competition topics and bibliographies, as well as the detailed calendar of the selection stages are published in an accessible and clear manner on the official university website, under the „Open positions” section.

The selection process is carried out in accordance with the university methodology for organizing competitions. The process of habilitation and granting the status of doctoral advisor is conducted according to the Habilitation Regulation of IOSUD POLITEHNICA Bucharest. The organization of elections within the Doctoral School is carried out in accordance with the Regulation on the organization of elections for the management structures of Doctoral Schools and the Council of Doctoral University Studies (CSUD), as well as the Regulation of the Doctoral Schools at POLITEHNICA Bucharest.

✓ Recommendations

The indicator is: fulfilled

Criterion A.4. Digitalisation of institutional processes

Standard S.A.4.1. Digital transformation	
The digital transformation process in the organisational component seeks to achieve administrative simplification and improve the quality of the services provided to the members of its own community, as well as to third parties.	
Indicator I.P.A.4.1.1	The organisational component uses IT tools in its own procedures, to improve access and provide good quality services for the members of its own community and the indirect beneficiaries of education.

The university actively employs institutionalized digital platforms, such as student.pub.ro, a digital academic management system that provides PhD students with permanent access to their academic status, course registration, and submission of periodic reports. This platform streamlines the administrative relationship with secretariats and supports the transparency of the educational pathway. The teaching process is complemented by extensive use of the curs.upb.ro platform, built on Moodle architecture and integrated with Microsoft 365—particularly Microsoft Teams—ensuring access to educational resources, online assessments, and real-time collaboration.

To support faculty involved in the program, the university provides access to the CRESCDI platform—a digital tool developed for centralizing, showcasing, and leveraging research results. Through this platform, the academic community can document participation in scientific projects, publications, innovation, and technology transfer activities, while also facilitating the identification of potential partners and increasing professional visibility.

POLITEHNICA Bucharest PhD students have access to several digital platforms designed to support academic and administrative activities and ensure an optimal doctoral journey. These include:

- CRESCDI – A platform for centralizing, monitoring, and evaluating research activities. Doctoral students can upload and update relevant information regarding scientific publications, research projects, and other academic activities, contributing to a transparent and coherent record of their scientific progress.
- Mobility.upb.ro– The official platform for managing international academic mobility to the university. Foreign PhD students can use this tool to access information and apply for mobility programs offered through the university's international partnerships, thereby expanding their academic experience in global research environments.
- PhD Admission Platform – The official platform for managing the doctoral studies admission process. It allows applicants to access required information, complete documentation, and follow the necessary steps to enroll in PhD programs. IOSUD-Politehnica Bucharest ensures a modern, efficient, and transparent framework for conducting doctoral activities in the field of Bioengineering.

Recommendations:

Increasing the number of optional courses would contribute to completing the skills of doctoral students, considering that they may come from different master's fields

The indicator is: fulfilled

DOMAIN B. Educational efficacy

Criterion B.1. Content and relevance of study programmes

Standard S.B.1.1. Content of study programme/s*

The study programme is based on a curriculum designed so that students can acquire the expected learning outcomes.

Indicator I.P.B.1.1.1	The study programme is developed and structured according to the expected learning outcomes, and organised based on transferable study credits. It includes all learning, teaching, practical training, research and evaluation experiences, which, together, lead to a higher education qualification.
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The doctoral study program in Bioengineering is designed to ensure the comprehensive training of future graduates of bachelor's and master's programs. The program is planned and organized in relation to the expected learning outcomes.

The academic progress and success of the PhD student are measured by the extent to which these learning outcomes are achieved, evaluated through formative and summative methods such as progress reports, applied activities, and other assessment forms suited to each subject.

The curriculum is structured to ensure alignment with Level 8 of the National Qualifications Framework (CNC) and the European Qualifications Framework (EQF), developing advanced research skills, critical analysis, and the generation of scientific knowledge in Bioengineering.

The program spans 4 years (240 transferable ECTS credits) and includes: Advanced scientific research activities in Bioengineering, Participation in mandatory complementary courses and modules (e.g., Academic Ethics and Integrity, Scientific Research Methodology, Research Project Management), Participation in scientific seminars, national and international conferences, and workshops, Teaching assistance activities and involvement in the faculty's research projects, Preparation of the doctoral thesis, which serves as the final certification of the doctoral qualification. The curriculum offers a balanced combination of theoretical (teaching), practical (training), and evaluative activities, all of which are essential for obtaining the university qualification.

Recommendations: There are no recommendations

The indicator is: fulfilled

Criterion B.2. Alignment of the curriculum with the qualification

Standard S.B.2.1. Alignment with the qualification level and the intended competences

In the curriculum design and development process, the organisational component seeks to ensure the qualification level, as well as correlation with the envisaged occupations.

Indicator I.P.B.2.1.2	The expected learning outcomes are correlated with the competences required by those occupations, according to the occupational standards and/or the European Skills, Competences and Occupations (ESCO).
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The Bioengineering doctoral study program proposed by IOSUD POLITEHNICA Bucharest, through the Faculty of Medical Engineering, has been designed to ensure a direct and explicit alignment between the expected learning outcomes and the professional competencies demanded by national and European labor markets, in accordance with internationally recognized occupational standards.

In developing the program structure, the following were considered:

* The term "programmes" concerns the external quality evaluation for the study programmes contained in a master/doctoral domain. The term "programme" shall be used hereinafter.

- The European Classification of Occupations (ESCO), especially occupations related to scientific research, biomedical engineering, applied bioengineering, and technological innovation in health and life sciences
- National qualification standards for doctoral studies, Level 8 CNC/EQF

The curricular structure and program content were developed in full alignment with the targeted qualification level (Level 8 CNC/EQF) and with occupations identified as relevant in the job market. By involving stakeholders from academia, healthcare, and industry in the curricular design process, alignment between market demands and graduate profiles was ensured.

The curriculum addresses the need to train professionals capable of integrating engineering and scientific knowledge into practical solutions in healthcare, the medical industry, and interdisciplinary research.

Recommendations: There are no recommendations

The indicator is: fulfilled

Criterion B.3. Student-centred learning, teaching and evaluation

Standard S.B.3.1 Principles

The organisational component implements the principles of student-centred learning.

Indicator I.P.B.3.1.1	The organisational component ensures implementation of the student-centred learning in the curriculum and through the teaching strategies used in the learning and teaching activities and experiences.
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The principles of student-centered learning are applied through an integrated curricular approach that emphasizes autonomy in learning, as well as the personal and professional development of PhD students. The educational process is tailored to individual student needs. These principles are stated in „Carta Universității Naționale de Știință și Tehnologie Politehnica București” and the Student Rights and Responsibilities Code.

The curriculum is designed according to the European Credit Transfer and Accumulation System (ECTS), encouraging progressive, autonomous, and responsible development. It allows doctoral students to personalize their educational path by choosing elective and optional subjects. Learning outcomes are the central focus in program design, ensuring consistency between the acquired competencies, the teaching methods used, and the forms of assessment.

In designing and developing the doctoral study program in Bioengineering, the university considered the implementation of student-centered learning principles, in line with applicable national and international standards in doctoral education.

Recommendations: There are no recommendations

The indicator is: fulfilled

Criterion B.4. Accessibility and efficiency of the resources and support services, adequate for learning

Standard S.B.4.1. Access to resources and services

The organisational component provides access to adequate resources and support services, according to the needs of the students.

Indicator I.P.B.4.1.1	The organisational component provides students, including those with special educational needs/disabilities, with access to resources and services designed to support the learning process, adequate for the individual learning needs, the study domain, the study cycle, and the form of organisation of the study programme.
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Within the Bioengineering doctoral program, equitable access to resources and services is provided for all students, including those with special educational needs or disabilities, in accordance with the internal regulations of POLITEHNICA Bucharest. Access to these resources is governed by key documents such as the Vehicle Access Regulation, the 2024 Undergraduate Admission Regulation, and the Student Rights and Responsibilities Code, all of which include provisions for individuals with disabilities to ensure fair treatment and adequate learning conditions.

In addition, the Center for Equity, Diversity, and Inclusion plays a critical role in supporting students with special needs. The center offers assistance and counseling to ensure accessibility to educational resources and infrastructure through measures tailored to individual student needs, regardless of study field or program format.

The structure of educational and research resources is well suited to the needs of the Bioengineering doctoral program. Access is provided without discrimination to all students (as outlined in the Gender Equality Plan), and the infrastructure supports high-standard teaching and research activities.

The university provides accessible educational materials, including digital books and the Moodle online learning platform. Study spaces are appropriately equipped. These resources and services include:

- Access to well-equipped, modern research laboratories relevant to the field of Bioengineering (e.g., BIOINGTEH, 3MN, GRABTOP, INOVABIOMED)
- Access to educational support platforms, including e-learning systems and digital resources offered by POLITEHNICA Bucharest
- University libraries, as well as national and international scientific databases (e.g., ISI, Scopus access)
- Academic counseling and career guidance services available through the university's Career Counseling and Guidance Center
- Administrative support via dedicated PhD secretariats and IOSUD administrative structures
- Adaptation of infrastructure and teaching materials for students with special educational needs, in accordance with legal regulations
- Access to extracurricular and scientific activities, such as conferences, workshops, and summer schools
- Opportunities to use international mobility resources through partnerships and bilateral agreements

Recommendations: There are no recommendations

The indicator is: fulfilled

Criterion B.5. Learning outcomes

Standard S.B.5.1. Definition and evaluation

Learning outcomes are adequately defined and evaluated.

Indicator I.P.B.5.1.1	Learning outcomes are adequately described, and they support understanding of the students' and teachers' expectations regarding the content of the subject matters in the curriculum.
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The doctoral study program in Bioengineering has been designed to ensure a clear, comprehensive, and coherent definition of the expected learning outcomes, in accordance with national and international standards applicable to higher education at Level 8 of the CNC/EQF.

Learning outcomes are formulated in such a way as to support both faculty members and doctoral students in understanding the educational objectives and requirements associated with each phase of the program.

Recommendations: There are no recommendations

The indicator is: fulfilled

Indicator I.P.B.5.1.2	Achievement of the learning outcomes is checked in ongoing examinations and study completion exams.
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In the Bioengineering doctoral program, the assessment of learning outcome achievement is regulated and carried out in accordance with the Doctoral Studies Regulations of Politehnica Bucharest. These documents establish the general structure of the assessment process, the guiding principles, and the methods used to verify the competencies specific to this cycle of studies.

Within the doctoral program organized by IOSUD-Politehnica Bucharest through the Faculty of Medical Engineering, the assessment process is rigorously structured and implemented in line with all applicable legal and regulatory provisions.

This process includes:

- Ongoing evaluations during the program, through periodic presentations in scientific seminars organized by the Doctoral School, participation in conferences and workshops with the presentation of personal research results, and the preparation of annual scientific reports reflecting research progress and activity within the doctoral advisor's projects or affiliated research teams
- Final evaluation of doctoral studies, consisting of the public defense of the doctoral thesis, evaluated by a specialized committee, in accordance with the IOSUD-POLITEHNICA BUCHAREST Regulations and national legislation. This includes an analysis of research quality, as demonstrated through scientific publications, patents, or other nationally and internationally recognized outputs

The evaluation process explicitly verifies the acquisition of advanced research competencies, the ability for critical analysis, and the generation of original scientific knowledge, as required at Level 8 CNC/EQF. The evaluation focuses on both quantitative and qualitative aspects of research and education activity and ensures transparency and objectivity through the involvement of specialized committees, compliance with internal regulations, and the use of internationally recognized quality criteria.

Finalization of doctoral studies is organized according to the Procedure for Completing Doctoral Studies, which establishes the composition of the evaluation committees and the conditions for thesis defense, ensuring a rigorous and relevant assessment of the competencies gained during the doctoral program.

Recommendations: There are no recommendations

The indicator is: fulfilled

Criterion B.7. Procedures and practices regarding the admission competition, the journey, recognition and equivalence of studies, and result certification

Standard S.B.7.1. Admission	
The admission procedures and principles ensure access to higher education.	
Indicator I.P.B.7.1.1	The organisational component applies the admission procedures..

Admission to the doctoral study program in Bioengineering, organized by IOSUD-Politehnica BUCHAREST through the Faculty of Medical Engineering, is carried out based on a rigorous and transparent methodology developed by IOSUD and approved by the Senate of the National University of Science and Technology Politehnica Bucharest, in accordance with national legal regulations and ARACIS standards.

The admission procedure includes:

- Organizing a public admission competition, announced in advance through institutional and public information channels
- Enrollment of candidates holding a master's degree or equivalent, in fields compatible with Bioengineering, in accordance with national and international regulations
- An interview and presentation of a scientific research project evaluated by a panel of PhD supervisors and domain experts

- Awarding scores and selecting candidates based on merit, according to scientific performance, the proposed project, and demonstrated aptitudes

The admission methodology is published on the IOSUD-Politehnica BUCHAREST website and is accessible to all interested parties. The admission process is conducted through the university's online doctoral admission platform.

Recommendations: There are no recommendations

The indicator is: fulfilled

Indicator I.P.B.7.1.2	Admission in higher education study programmes complies with the principles of fairness and equal opportunities, and with the establishing of support measures to ensure access of vulnerable groups at social and educational risk, including candidates with special educational needs and/or disabilities.
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According to the Regulations on the Organization and Functioning of the Center for Equity, Diversity, and Inclusion, candidates with disabilities benefit from adapted admission specific individual needs of such candidates. During the Bioengineering doctoral admission process, IOSUD Politehnica Bucharest consistently applies the principles of equity and equal opportunity, in accordance with national law, internal regulations, and European standards in doctoral education. In addition, the university offers personalized support for candidates with physical disabilities, facilitating their access to the institution.

- ✓ Aspects that constitute best practice examples

Concrete measures implemented to uphold these principles include:

- Transparent publication of admission methodology and conditions, accessible equally to all candidates
 - Possibility to adapt the examination process, upon request, for candidates with special educational needs and/or disabilities to eliminate access barriers
 - Provision of counseling and administrative support throughout the application and selection process
 - Encouraging candidates from vulnerable or at-risk social and educational backgrounds to apply
 - Respecting confidentiality and the dignity of each candidate throughout the admission process
- Access to information, the ability to adapt the examination process, and the existence of support structures (such as the Educational Counseling and Support Center) contribute to maintaining an inclusive and accessible framework.

Recommendations; There are no recommendations

The indicator is: fulfilled

Standard S.B.7.2. Academic journey of students	
The organisational component carries out actions supporting the students' academic journey.	
Indicator I.P.B.7.2.1	The organisational component applies the regulations concerning the students' professional activity.

The doctoral program in Bioengineering ensures full academic progression for students, including all phases, activities, and experiences related to their professional and academic development. A series of measures and programs are in place to support student performance and facilitate the transition from academic training to the professional field. PhD students receive clear and accessible information about the stages and requirements of the program, and their progress is monitored periodically to ensure learning outcomes are achieved.

Additionally, the program supports professional development by encouraging entrepreneurial spirit through the Student Entrepreneurship Center, which operates based on the Center's Regulations and is

managed by an Executive Council. The program also regulates student volunteer activities according to the Methodology for Awarding ECTS Credits for Volunteering Activities.

Recommendations: There are no recommendations

The indicator is: fulfilled

DOMAIN C. Quality management

Criterion C.3. Procedures for the initiation, monitoring and periodic review of the study programmes and domains and of the performed activities, involving students, employers and other stakeholders

Standard S.C.3.1. Procedures and implementation of procedures

The HEI has procedures for initiating, monitoring, and periodically reviewing the study programmes and domains and the performed activities, and applies them systematically.

Indicator	The organisational component consistently applies the procedures, and proves their impact on quality assurance.
I.P.C.3.1.1	

Politehnica Bucharest consistently applies quality assurance procedures. These procedures are developed based on the university's internal framework, in accordance with the Regulation on the Internal Quality Assurance System (SIAC). Their implementation is coordinated by the Commission for Evaluation and Quality Assurance (CEAC), in collaboration with the Evaluation and Quality Assurance Directorate (DEAC), Faculty Committees for the Implementation of Quality Standards (CFISAC), and designated quality officers in departments and doctoral schools.

The university follows a clear set of methodologies, regulations, and procedures (such as the Doctoral Admission Methodology, the Regulation on Doctoral University Studies at Politehnica Bucharest, etc.), which are periodically reviewed and updated to reflect legislative requirements and the academic community's evolving needs. The application of these procedures is validated through internal evaluations, feedback collected from doctoral students and faculty, internal audits, and the monitoring of outcomes from implemented measures.

The impact of these institutional quality assurance procedures at the National University of Science and Technology Politehnica Bucharest is reflected in the continuous optimization of teaching and assessment processes, increased student satisfaction (as shown by survey data), modernization of academic infrastructure through strategic projects, and the strengthening of partnerships with the socio-economic sector.

Recommendations: There are no recommendations

The indicator is: fulfilled

Indicator	Members of its own community and other stakeholders are involved in the procedure implementation process.
I.P.C.3.1.2	

In the Bioengineering doctoral program, the organizational component ensures effective implementation of specific Internal Quality Assurance System procedures through the active involvement of academic community members who participate in the relevant structures and, according to their internal regulations, may also engage other stakeholders. Participation is structured and based on internal methodologies and regulations approved by the National University of Science and Technology Politehnica Bucharest. Academic community members: faculty, students, and administrative staff are involved in applying these procedures through representation in the Doctoral School Council. Additionally, regular consultations are held with representatives from the Bioengineering industry and socio-economic environment (e.g., Ortovit SRL, National Agency for Medicines and Medical Devices, Medist SRL, Biosintex), who provide external perspectives on the program's relevance, learning outcomes, and labor

market demands. These consultations take place via online meetings and help inform strategic decisions regarding program development.

Recommendations:

To increase collaboration with the medical field, it is recommended to establish better relationships with hospitals, thus facilitating a better insertion of graduates in the medical field.

The indicator is: fulfilled

Criterion C.8. Participation in external evaluation processes, according to the law

Standard S.C.8.1. Compliance with the external evaluation obligation The HEI undergoes external quality evaluation as required by the law.	
Indicator I.P.C.8.1.1	The organisational component carries out the procedures pertaining to the external quality evaluation process, aiming to organise the evaluated study programme as provided by the law.

At IOSUD Politehnica Bucharest, all necessary procedures have been initiated to undergo external quality evaluation by formally requesting an external mission for the provisional authorization of the doctoral study field in Bioengineering, part of the Doctoral School of Medical Engineering.

Recommendations: There are no recommendations

The indicator is: fulfilled

IV. SWOT Analysis

Strengths:	Weaknesses:
<p>1. UNST Politehnica has a strong and well-recognized academic reputation, being the most prestigious technical institution in Romania, with a tradition of over 200 years. In the context of developing the Bioengineering field, Politehnica Bucharest benefits from a highly qualified human resource, consisting of habilitated PhD supervisors in related fields, active in research, with wide international experience and strong scientific visibility.</p> <p>2. The advanced available research infrastructure developed within platforms such as BIOINGTEH, INOVABIOMED, GRABTOP, and eBio-Hub, which enable the execution of complex experimental activities in bioengineering, biomimetic materials, biosensors, and stem cells. Research facilities are truly remarkable, as they fulfill all recent requirements in terms of space distribution, allocated spaces, available complementary services, etc. In terms of research infrastructure, research facilities are well equipped with state-</p>	<p>1. Despite the proven academic and scientific capacity of UNSTPB, a dedicated doctoral field in Bioengineering is currently absent from the IOSUD structure. This necessitates initial provisional authorization and the completion of several administrative and institutional validation steps, often involving extended timelines.</p> <p>2. The absence of a formal institutional tradition in the field of Bioengineering, specifically the prior existence of an established doctoral nucleus. Although relevant activities are present in other fields such as medical engineering, biotechnology, and materials science, they have not yet been consolidated into a distinct doctoral identity. This may initially create challenges in external positioning and recognition.</p> <p>3. At the international level, Politehnica Bucharest has strong collaborations, but they are limited when it comes to joint supervision (cotutelle) or formal partnerships specifically in</p>

<p>of-the art equipment that can clearly help and motivate students to properly engage in their research activities;</p> <p>3. The university offers well-established bachelor's and master's programs in the fields of bioengineering, biotechnology, and medical engineering, ensuring a logical continuity toward doctoral studies and contributing to the development of a comprehensive educational ecosystem. This solid educational foundation is further supported by ongoing national and international projects that promote applied research and technology transfer.</p> <p>4. Politehnica Bucharest has demonstrated mature administrative and academic capacity through its internal quality assurance system, which is adaptable to both national and international regulatory requirements, as well as through its active involvement in internationalization initiatives, joint doctoral supervision, and strategic partnerships with top universities in Europe and the United States.</p> <p>5. The natural interdisciplinary openness of the proposed field aligns perfectly with the structure of Politehnica Bucharest, where faculties from engineering, applied sciences, life sciences, and medical sciences collaborate. This makes it possible to develop an integrated, competitive, and socially and scientifically relevant doctoral program.</p> <p>6. The university's ability to attract non-budgetary resources, its experience in managing European projects, and its commitment to solution-oriented health research all support the long-term viability and impact of the Bioengineering field.</p> <p>7. The extensive experience of the PhD supervisors involved in the program, combined with their active participation in international collaboration networks, provides a strong foundation for high-quality doctoral training and research opportunities.</p>	<p>Bioengineering, compared to other well-established engineering fields. Therefore, it is necessary to develop targeted academic relationships with universities that already offer doctoral programs in Bioengineering, in order to support external visibility and international mobility for future.</p> <p>4. Attracting international doctoral students to this new field may be impacted by the degree of international recognition of the Bioengineering qualification in Romania, due to the lack of an established history of equivalent degrees or titles. An active promotion strategy for the new program is necessary, along with investments in international communication and academic branding.</p> <p>5. The existing curricular fragmentation among the faculties involved in fields adjacent to Bioengineering. This situation requires a coordinated effort to harmonize human resources, logistics, and research topics within a coherent and efficient doctoral structure that avoids overlaps or gaps in content.</p>
<p style="text-align: center;">Opportunities:</p> <p>1. The current national and international context offers a number of favorable external factors that can support the development and consolidation of a doctoral field in Bioengineering, thereby contributing to the improvement of educational quality within the program.</p> <p>2. The growing global strategic interest in</p>	<p style="text-align: center;">Threats:</p> <p>1. Competition from well-established international universities that already offer doctoral programs in Bioengineering—with greater visibility and more substantial resources—may limit the ability to attract international students or even top Romanian candidates, who might opt for</p>

<p>research and innovation across the medical, biotechnological, and bioengineering fields- especially in light of lessons learned from the pandemic and the rapid technological advances in areas such as personalized medicine, biomedical devices, gene therapy, and tissue engineering. In this context, investments in biomedical research and applied health engineering are supported by public policies, European grants, and transnational partnerships, creating a favorable climate for expanding doctoral offerings in these areas.</p> <p>3. The programs - such as Horizon Europe, Erasmus+, EU4Health, and Digital Europe - include dedicated lines for doctoral training, cross-border research, and partnerships in the life sciences and emerging technologies. Aligning the Bioengineering field with such initiatives can stimulate international mobility for PhD students, support the development of joint supervision (cotutelle) arrangements, and enhance academic visibility.</p> <p>4. International co-tutelage doctorate might be a way of attracting more students towards Bioengineering Doctoral Domain.</p>	<p>externally funded mobility programs or institutions with immediate academic recognition.</p> <p>2. The volatility of public funding for research and advanced education in Romania. If budgetary resources for doctoral research and infrastructure are inconsistent or insufficient, there is a risk of underfunding the newly established field, which could negatively impact the quality of training and the ability to attract high-performing faculty and doctoral students.</p> <p>3. The migration of highly qualified human resources, both young researchers and potential doctoral supervisors, toward a more stable international academic environment may lead to challenges in maintaining a sustainable and competitive doctoral core.</p> <p>4. The lack of a well-established culture in Romania for effective collaboration between academia and the medical sector may delay the development of applied research projects in bioengineering. Administrative barriers, institutional reluctance, and ethical or legal challenges related to the use of human biological resources can hinder the implementation of advanced research topics.</p> <p>5. Risk of overestimating the level of interest among prospective students, which could lead to a lower-than-anticipated number of enrollments and affect the program's sustainability in its initial stages.</p> <p>6. Possible challenges for prospective students in fully understanding the unique benefits of this doctoral domain, especially when compared to already well-established programs that may appear more familiar or secure.</p>
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Key Challenges and Strategic Development Directions

The establishment of a new doctoral field involves a series of institutional, academic, and systemic challenges that must be managed strategically:

1. Building a distinct academic identity for the Bioengineering field within IOSUD, in the absence of a previously defined framework.
2. Efficient integration of human, curricular, and research resources from multiple faculties (Medical Engineering, Mechanical Engineering, Materials Science and Engineering, Biotechnical Systems Engineering, Chemical Engineering and Biotechnologies), to avoid fragmentation and ensure coherent doctoral training.
3. Formal accreditation and regulation of the field, within a national legislative framework not yet fully adapted to emerging interdisciplinary fields. This may slow down official recognition and graduate academic mobility.
4. Attracting enough habilitated PhD supervisors specifically in Bioengineering to build a sustainable and balanced doctoral school aligned with doctoral training demand.
5. Ensuring financial sustainability for infrastructure development, international mobility, and applied research projects, in the context of fluctuating national budgets.

V. Extent to which the standards and performance indicators are fulfilled, and recommendations

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
DOMAIN A. Institutional capacity			
1.	I.P.A.1.1.1 For delivering the study programme/domain, the HEI has adequate organisational components and an adequate management system, which operate based on methodologies, regulations and procedures that are periodically reviewed as required by law.	Fulfilled	There are no recommendations
2.	I.P.A.1.2.1 The opinions of the faculty and department members, of the subsidiary or extension and of other stakeholders are considered in the process of adopting and revising methodologies, regulations and implementation procedures.	Fulfilled	<ul style="list-style-type: none"> - <i>Establish structured partnerships with employers and other stakeholders via consistent engagement and consultation.</i> - <i>Further develop mechanisms to ensure alignment between institutional research agendas and the identified needs of the socioeconomic environment, promoting demand-driven, application-oriented research.</i>
3.	I.P.A.2.1.1 The HEI legally owns venues for the related education, research and administrative processes, as well as for services for students, doctoral students and trainees, thus providing an enabling environment for living and studying, including for disabled persons. Optimal venues are also	Fulfilled	- <i>Progressively improve accessibility for individuals with disabilities and/or functional diversity, addressing architectural barriers in older buildings, while ensuring all new constructions are fully compliant with accessibility standards.</i>

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
	provided for activities of the staff. Such venues are adequately equipped.		
4.	I.P.A.2.2.1 The movable and immovable assets are properly maintained to ensure optimal conditions for studying, living and research, as well as for work.	fulfilled	<i>-Continue the systematic modernization of research laboratories by ensuring alignment of infrastructure (equipment, software, instrumentation) with current technological standards and scientific priorities relevant to the doctoral studies.</i>
5.	I.P.A.3.1.1 The human resources of the organisational component are suitable to perform the activities pertaining to the evaluated study programme/domain. The teaching staff has the required qualifications and professional competences to teach the subject matters assigned to them in the job list.	fulfilled	<i>Increasing the number of PhD supervisors. At least one PhD supervisor with medical skills would be an advantage for the doctoral field.</i>
6.	I.P.A.3.2.1 Recruitment procedures comply with the provisions of the law, and are established and carried out transparently.	fulfilled	There are no recommendations
7.	I.P.A.4.1.1 The organisational component uses IT tools in its own procedures, to improve access and provide good quality services for the members of its own community and the indirect beneficiaries of education.	fulfilled	There are no recommendations
DOMAIN B. Educational efficacy			
8.	I.P.B.1.1.1 The study programme is developed and structured according to the expected learning outcomes, and organised based on transferable study credits. It includes all learning, teaching, practical training, research and evaluation experiences, which, together, lead to a higher education qualification.	fulfilled	There are no recommendations
9.	I.P.B.2.1.2 The expected learning outcomes are correlated with the competences required by those occupations, according to the occupational standards and/or the European Skills, Competences and Occupations (ESCO).	fulfilled	There are no recommendations
10.	I.P.B.3.1.1 The organisational component ensures implementation of the student-centred learning in the curriculum and through the teaching strategies used in the learning and teaching activities and experiences.	fulfilled	There are no recommendations
11.	I.P.B.4.1.1 The organisational component provides students, including those with special educational needs/disabilities, with access to resources and services designed to support the learning process, adequate for the individual learning needs, the study domain, the study cycle, and the form of organisation of the study programme.	fulfilled	<i>Increasing the number of optional courses would contribute to completing the skills of doctoral students, considering that they may come from different master's fields</i>
12.	I.P.B.5.1.1 Learning outcomes are adequately described, and they support understanding of the students' and teachers' expectations	fulfilled	There are no recommendations

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
	regarding the content of the subject matters in the curriculum.		
13.	I.P.B.5.1.2 Achievement of the learning outcomes is checked in ongoing examinations and study completion exams.	fulfilled	There are no recommendations
14.	I.P.B.7.1.1 The organisational component applies the admission procedures.	fulfilled	There are no recommendations
15.	I.P.B.7.1.2 Admission in higher education study programmes complies with the principles of fairness and equal opportunities, and with the establishing of support measures to ensure access of vulnerable groups at social and educational risk, including candidates with special educational needs and/or disabilities.	fulfilled	There are no recommendations
16.	I.P.B.7.2.1 The organisational component applies the regulations concerning the students' professional activity.	fulfilled	There are no recommendations
DOMAIN C. Quality management			
17.	I.P.C.3.1.1 The organisational component consistently applies the procedures, and proves their impact on quality assurance.	fulfilled	There are no recommendations
18.	I.P.C.3.1.2 Members of its own community and other stakeholders are involved in the procedure implementation process.	fulfilled	To increase collaboration with the medical field, it is recommended to establish better relationships with hospitals, thus facilitating a better insertion of graduates in the medical field.
19.	I.P.C.8.1.1 The organisational component carries out the procedures pertaining to the external quality evaluation process, aiming to organise the evaluated study programme as provided by the law.	fulfilled	There are no recommendations

Summary Table of Performance Indicators – Degree of Fulfillment

Evaluation Domain	Number of Performance Indicators		
	Fulfilled	Partially fulfilled	Unfulfilled
Domain A. Institutional capacity	7		
Domain B. Educational efficacy	9		
Domain C. Quality management	3		
Total	19	0	0

VI. Conclusions

Following the analysis of the documents available in the internal evaluation filed, the discussions held with the university representatives involved in the design and implementation of this new doctoral field - Bioengineering - and based on the conclusions resulting from the analysis of the available infrastructure, the points of view expressed by the socio-economic representatives, the members of the external evaluation committee agree with the provisional authorization of the doctoral field BIOENGINEERING.

Following the completion of the provisional authorisation to operate procedure, the decision of the evaluation panel is the following:

Provisional Authorisation to Operate (PA)

VII. Annexes

Agenda

Nr./No.	Numele și prenumele / Last Name and First Name	Calitatea/Team role	Nr./No.	Numele și prenumele/ Last Name and First Name	Calitatea/Team role
1.	<i>Mămăligă Ioan</i>	<i>Membru - Cadru didactic RNE</i>	1.	<i>Iovu Horia</i>	<i>Responsabil program</i>
2.	<i>Ghinea Răzvan Ionuț</i>	<i>Membru - Evaluator internațional RNE-I</i>	2.	<i>Biru Elena-Iulina</i>	<i>Responsabil intocmire REI</i>
3.	<i>Varodi Sânziana - Maria</i>	<i>Membru - Student doctorand RNE-S</i>	3.	<i>Țucă Petrișor - Laurențiu</i>	<i>Persoană de contact/Contact person</i>

Intervalul orar / Hour	Activități de evaluare / Evaluation activities	Participanți / Participants	Locație / Location / Listă participanți / List of Participants
Joi/Thursday 28.08.2025			
19.00 – 20.00	Întâlnire online a membrilor comisiei de evaluare; Stabilirea responsabilităților membrilor comisiei.	Membrii comisiei de evaluare / <i>Panel members</i>	Platforma Meet google
Miercuri / Wednesday, 3.09.2025			
18:00-18:50	Discuții tehnice în cadrul comisiei de experți în evaluarea externă a calității / <i>Technical discussions within the expert committee for external quality evaluation</i>	- Comisia de experți evaluatori ai ARACIS / <i>Panel members</i>	Sala A033, corp A, strada Gheorghe Polizu nr 1-7, București / Room A033, Building A, Gheorghe Polizu 1-7 street, Bucharest
Joi/Thursday, 4.09.2025			
9:00 - 9:30	Întâlnirea comisiei de experți în evaluarea externă a calității cu reprezentanții conducerii componentei organizatorice / <i>Meeting of the external quality evaluation experts' panel with the representatives of the</i>	- Comisia de experți evaluatori ai ARACIS / <i>Panel members</i> - Reprezentanți ai conducerii componentei organizatorice aferente domeniului	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București / F321, building F, 3rd floor/Faculty of Medical Engineering , Gheorghe Polizu 1-7 street, Bucharest

	<p><i>management of the organisational component</i></p>	<p>de studii de doctorat evaluat/ <i>Representatives of the management of the organisational component</i> - Persoana de contact/ <i>Contact person</i></p>	<p>Lista persoanelor care vor participa la întâlnire/ List of participants attending the meeting: - Prof. univ. dr. – Prorector Politehnica Bucuresti/ [Vicerector Politehnica Bucharest] - Prof. univ. dr. – Decan al Facultății de Inginerie Medicală/ [Dean of Faculty of Medical Engineering] - Prof. univ. dr. – Prodecan Facultatea de Inginerie Medicală/ [Vice dean Faculty of Medical Engineering] - Prof. univ. dr. – Prodecan Facultatea de Inginerie Medicală/ [Vice dean Faculty of Medical Engineering] - Prof. univ. dr., Facultatea de Inginerie Medicală, Presedinte Centrul de excelenta in bioinginerie/ Faculty of Medical Engineering, President of the Center of Excellence in Bioengineering - Dr. – Director Centrul de de excelență în bioinginerie, Director of Center of Excellence in Bioengineering - Dr. – membru Centrul de de excelență în bioinginerie/ member of Center of Excellence in Bioengineering - Conf. Univ. Dr., membru Centrul de de excelență în bioinginerie, responsabil pentru întocmirea REI/ member of the Center of Excellence in Bioengineering, responsible for preparing the IER - CSII, membru Centrul de de excelență în bioinginerie/ member of Center of Excellence in Bioengineering</p>
<p>9:30 - 10:20</p>	<p>Întâlnirea comisiei de experți evaluatori în evaluarea externă a calității cu echipa care a realizat raportul de evaluare internă (REI)/ <i>Meeting of the external quality evaluation experts' panel with the team that has drafted the internal evaluation report</i></p>	<p>- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Echipa care a realizat REI/ <i>Team that has drafted the IER</i></p>	<p>Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical Engineering, Gheorghe Polizu 1-7 street, Bucharest Lista persoanelor care vor participa la întâlnire/ List of participants attending the meeting: - Conf. Univ. Dr., membru Centrul de de excelență în bioinginerie, responsabil pentru întocmirea REI/ member of the Center of Excellence in Bioengineering, responsible for preparing the IER - CSII, membru Centrul de de excelență în bioinginerie/ member of</p>

			Center of Excellence in Bioengineering
10:30-12:30	Vizitarea bazei materiale/ <i>Visiting the material resources</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Reprezentanți ai instituției sau Academiei Române, după caz/ <i>Representatives of the HEI or the Romanian Academy, as applicable</i>	
12:30-12:50	Întâlnire tehnică a comisiei de experți evaluatori/ <i>Technical meeting of the expert evaluation panel</i>		
13:00-13:50	Întâlnirea comisiei de experți în evaluarea externă a calității cu personalul didactic implicat în activitățile din cadrul DSUD/ <i>Meeting of the external quality evaluation experts' panel with the teaching staff involved in the activities within the DSUD</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Cadre didactice conducători de doctorat/ <i>Teaching staff who are PhD supervisors</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical Engineering , Gheorghe Polizu 1-7 street, Bucharest Lista persoanelor care vor participa la întâlnire/ List of participants attending the meeting: - Prof. univ. dr. – Decan al Facultății de Inginerie Medicală/ [Dean of Faculty of Medical Engineering] - Prof. univ. dr., conducător de doctorat în Ingineria Mediului, PhD supervisor in Environmental Engineering field - Prof. univ. dr. ing. – conducător de doctorat în domeniul Inginerie Mecanică, PhD supervisor in Mechanical engineering field - Prof. univ. dr. ing. - conducător de doctorat în domeniul Ingineria Materialelor, PhD supervisor in Materials Engineering field - Prof. univ. dr. – Prodecan Facultatea de Inginerie Medicală/ [Vice dean Faculty of Medical Engineering] - Prof. univ. dr. – Prodecan Facultatea de Inginerie Medicală/ [Vice dean Faculty of Medical Engineering] - Prof. univ. dr., Facultatea de Inginerie Medicală, Presedinte Centrul de excelenta in bioinginerie/ Faculty of Medical Engineering, President of the Center of Excellence in Bioengineering - Dr. – Director Centrul de de excelență în bioinginerie, Director of Center of Excellence in Bioengineering

13:50 - 15:00	Pauză/ <i>Break</i>		
15:00 - 15:50	Întâlnirea comisiei de experți în evaluarea externă a calității cu responsabilii centrelor/laboratoarelor de cercetare / <i>Meeting of the external quality evaluation experts' panel with the staff in charge with the research centres/laboratories</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Responsabilii centrelor/laboratoarelor de cercetare/ <i>Staff in charge with research centres/laboratories</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical Engineering , Gheorghe Polizu 1-7 street, Bucharest Lista persoanelor care vor participa la întâlnire/ List of participants attending the meeting: - Prof. univ. dr....., Rresponsabil laborator Biopolimeri si Biocompozite / Laboratory responsible Biopolymers and biocomposites - Conf. Univ. Dr., Director Centrul de Cercetări pentru Materiale Polimerice Avansate, Head of the Advance Polymer Materials Group - Prof. univ. habil.dr.....
15:50- 16:00	Întâlnire tehnică a comisiei de experți evaluatori/ <i>Technical meeting of the expert evaluation panel</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical Engineering , Gheorghe Polizu 1-7 street, Bucharest
16:00 - 16:50	Întâlnirea comisiei de experți în evaluarea externă a calității cu angajatori ai absolvenților DSUD/ <i>Meeting of the external quality evaluation experts' panel with employers* of the DSUD alumni</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Angajatori/ <i>Employers</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical Engineering , Gheorghe Polizu 1-7 street, Bucharest
Vineri/ Friday, 5.09.2025			
9:00 - 9:30	Întâlnirea tehnică a comisiei de experți evaluatori (Activitate în colaborare pentru clarificarea aspectelor prezentate în REI)/ <i>Technical meeting of the expert evaluation panel (Collaborative activity for clarifying the aspects presented in the Internal Evaluation Report - IER)</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical Engineering , Gheorghe Polizu 1-7 street, Bucharest
9:30 - 10:20	Întâlnirea comisiei de experți în evaluarea externă a calității cu reprezentanți ai structurilor organizatorice în domeniul asigurării calității/ <i>Meeting of</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Reprezentanți ai structurilor	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical

* Avoid inviting employers who are also staff of the HEI or members of the Romanian Academy, as applicable.

	<i>the external quality evaluation experts' panel with representatives of the quality assurance organisational structures</i>	organizatorice în domeniul asigurării calității/ <i>Representatives of quality assurance organisational structures</i>	Engineering , Gheorghe Polizu 1-7 street, Bucharest Lista persoanelor care vor participa la întâlnire/ List of participants attending the meeting: - Prof. univ. dr. ----- – Prodecan Facultatea de Inginerie Medicală/ [Vice dean Faculty of Medical Engineering] - ----- - Director Direcția Evaluarea și Asigurarea Calității/ Director of the Quality Assessment and Assurance Department
10:30 - 11:20	Întâlnirea comisiei de experți în evaluarea externă a calității cu membri ai Comisiei de etică universitară/ Meeting of the experts panel with members of the University Ethics Committee	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Membri ai Comisiei de etică universitară/ <i>Members of the University Ethics Committee</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/FIM , Gheorghe Polizu 1-7 street, Bucharest Lista persoanelor care vor participa la întâlnire/ List of participants attending the meeting: - Prof. Univ. Dr. – membru comisia de Etică UNST P București/ Member of the Ethics Committee of the UNST P Bucharest - Ș.I. dr. – membru comisia de Bioetică Politehnica București/ member of the Bioethics Committee of the Politehnica Bucharest
11:20- 12:00-	Întâlnire tehnică a comisiei de experți evaluatori/ <i>Technical meeting of the expert evaluation panel</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/FIM Engineering , Gheorghe Polizu 1-7 street, Bucharest
12:00 - 12:50	Întâlnirea membrilor comisiei de experți evaluatori cu reprezentanții conducerii ÎS pentru comunicarea concluziilor procesului de evaluare/ <i>Meeting of the members of the expert evaluators' panel with representatives of the management of the HEI and management of the organisational component, to communicate the conclusions of the evaluation process</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Reprezentanți ai conducerii și ai domeniului de studii evaluat/ <i>Representatives of the management</i> - Persoana de contact/ <i>Contact person</i>	Sala F321, corpul F, etaj 3/Facultatea de Inginerie Medicală, strada Gheorghe Polizu 1-7, București/ F321, building F, 3rd floor/Faculty of Medical Engineering , Gheorghe Polizu 1-7 street, Bucharest